Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

**Unit 2: Topic 1 Atomic and Molecular Structure Notes**

1. Provide the definition of ***Element*** in the space below:
2. There are \_\_\_\_\_\_\_ elements in nature. (Examples: \_\_\_\_\_\_\_\_\_\_\_ (Na), \_\_\_\_\_\_\_\_\_\_\_ (Cl), \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (H), and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Pb) )
3. Provide the definition of ***Atom*** in the space below
4. Atoms contain 3 types of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are even smaller.
5. The three types of subatomic particles are:
6. Provide the definition of each subatomic particle in the table below.

|  |  |  |
| --- | --- | --- |
| ***Protons (+)*** | ***Neutrons (0)*** | ***Electrons (-)*** |
|  |  |  |

1. Provide the definition of an ***Isotope*** in the space below, and give an example.

Definition:

Example:

1. Almost all of the mass of an atom is in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The mass of an atom can be calculated by adding the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Protons + Neutrons = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Where can I find the number of protons?

Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Atomic Number = The # of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. How do I find the number of neutrons?

Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Atomic Mass – Atomic # = The # of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. A chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a substance formed by the chemical combination of two or more elements in definite proportions.
2. Characteristics of compounds:
   1. Always formed from a specific combination of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   2. Always formed in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
      1. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
      2. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Compounds are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ different from the elements they are made from.
      1. Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. The ***electrons*** that participate in ***chemical bonds*** are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Provide the definitions of 2 types of chemical bonds***, ionic and covalent***, in the space below:
   1. Ionic Bond:
   2. Covalent Bond
5. The structure that results when atoms are joined together by covalent bonds is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. When molecules are close together, a slight attraction can develop between the oppositely charged regions of nearby molecules. This attraction is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.